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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/568,428

02/14/2006

Taishi Shigematsu

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ALEXANDRIA, VA 22320-4850

EXAMINER

HEINCER, LIAM J

ART UNIT

PAPER NUMBER

1796

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/568,428	<b>Applicant(s)</b> SHIGEMATSU ET AL.	
	<b>Examiner</b> Liam J. Heincer	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-24 and 26-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 11-18, 20-24 and 26-29 is/are rejected.
- 7) ☒ Claim(s) 4, 19, and 30-35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 27 and 28 are objected to because of the following informalities: there is a typo in claim 27 such that it reads "the idol compound" rather than "the diol compound". There is a typo in claim 28 such that it reads "aliphatic olymer" rather than "aliphatic polymer". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 5-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Seiden et al. (GB 1458570) when taken with Applicant's admission (pg. 11, original specification).

Considering Claims 1-3, 5, 8, 9, and 11: Seiden et al. teaches a method comprising polymerizing glycerin/a polyhydric alcohol having two primary alcohol groups and one secondary alcohol group in the presence of sulfuric acid/an oxidation and dehydration catalyst (2:23-46). While Seiden et al. does not disclose the formation of ketone groups, sulfuric acid will necessarily provide ketone groups in the polymer as evidenced by the disclosure presented in the original specification (page 11).

Considering Claims 6 and 7: Applicant has failed to define the conditions where the volatility of the catalyst is judged. As sulfuric acid can be both volatile or nonvolatile depending on the conditions, the claim limitations are determined to be taught.

Considering Claim 12: Seiden et al. teaches adding a diol to the reaction mixture (2:28-36).

Considering Claims 13 and 14: Seiden et al. teaches heating the mixture/treating with infrared radiation (2:23-27).

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Considering Claim 15: Seiden et al. teaches the polymer as having residual hydroxyl groups, as they can be esterified with acids (3:19-122).

Claims 16-18, 20-26, 28, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Seiden et al. (GB 1458570) when taken with Applicant's admission (pg. 11, original specification).

Considering Claims 16-18, 20, and 23-26: Seiden et al. teaches a method comprising polymerizing glycerin/a polyhydric alcohol having two primary alcohol groups and one secondary alcohol group in the presence of sulfuric acid/an oxidation and dehydration catalyst (2:23-46). While Seiden et al. does not disclose the formation of ketone groups, sulfuric acid will necessarily provide ketone groups in the polymer as evidenced by the disclosure presented in the original specification (page 11).

Considering Claims 21 and 22: Applicant has failed to define the conditions where the volatility of the catalyst is judged. As sulfuric acid can be both volatile or nonvolatile depending on the conditions, the claim limitations are determined to be taught.

Considering Claim 27: Seiden et al. teaches adding a diol to the reaction mixture (2:28-36).

Considering Claims 28 and 29: Seiden et al. teaches heating the mixture/treating with infrared radiation (2:23-27).

### ***Allowable Subject Matter***

Claims 4, 19, and 30-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Considering Claims 4 and 19: There is nothing in the prior art of record to teach or suggests polymerizing a polyetherpolyol with secondary alcohol groups to produce an aliphatic polymer having ketone groups in the main chain. The closest prior art, Mullen

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et al. teaches polymerizing a polyether polyol with only primary alcohol groups in the presence of a catalyst. However, there is nothing in the reference to teach or suggest using a compound with secondary alcohol groups, or that the resultant product will contain ketone groups.

Considering Claim 30: There is nothing in the prior art of record to teach or suggest polymerizing the claimed polyhydric alcohol to form a gel substance, applying the gel substance to a substrate, then hardening the gel substance. The closest prior art, Seiden et al. teaches polymerizing the claimed polyhydric alcohol, but the end use is as a food emulsifier, not as a gel substance on a substrate. There is nothing in the prior art of record to teach or suggest using the polyglycerol of Seiden et al. in the claimed process.

Considering Claims 31-35: There is nothing in the prior art of record to teach or suggest adding a electrically conductive material to the polyhydric alcohol comprising reactant mixture. The closest prior art, Seiden et al. teaches polymerizing the claimed polyhydric alcohol, but does not teach adding an electrically conductive powder to the raw material. As the end use of the compound of Seiden et al. is as a food emulsifier, a person having ordinary skill in the art at the time of invention would not be motivated to add a conductive powder to the composition prior to polymerization, as electrical conductivity is not a desired property in food emulsification.

### ***Response to Arguments***

Applicant's arguments filed November 4, 2008 have been fully considered but they are not persuasive, because:

A) Applicants argument that Seiden et al. does not teach ketone groups in the polymer backbone is not persuasive. The instant claims are process claims. As Seiden et al. teaches all the claimed method steps, the reference would inherently result in the claimed product. If the applicants position is that the claimed process steps would not inherently result in the claimed final product, then essential method steps have been omitted from the claims.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/

LJH

Supervisory Patent Examiner, Art Unit 1796

February 9, 2009